



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,182	06/25/2004	Shoji Tanaka	3688ME-55	5332
22442	7590	09/13/2005		EXAMINER
SHERIDAN ROSS PC				NI, SUHAN
1560 BROADWAY				
SUITE 1200			ART UNIT	PAPER NUMBER
DENVER, CO 80202			2646	

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/500,182	TANAKA, SHOJI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Suhan Ni	2646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 June 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 2 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 2 and 5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/12/2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

1. The Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to **Group Art Unit 2646.**
2. This communication is responsive to the application filed 06/25/2004.

***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the diameter of said piezoelectric

ceramic is almost identical to that of said dome part" in claim 2, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. Figures should be designated by a legend such as --**Prior Art**-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, it recites the limitation of “the effective movable diameter of said piezoelectric ceramic vibrator” in lines 13-15. There is insufficient antecedent basis for this limitation in the claim.

In claim 5, it recites the limitation of “the effective movable diameter of said piezoelectric ceramic vibrator” in lines 13-15. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda (U.S. Pat. – 4,386,241).

Regarding claim 2, Maeda discloses a speaker for reproducing ultrahigh frequency output, comprising: a schematically disk-shaped piezoelectric ceramic vibrator (21-23) in which

a piezoelectric ceramic (22 or 23) and a metal substrate (21) are bonded; a dome-shaped diaphragm (42) attached to said piezoelectric ceramic vibrator; and a panel (10) which fixes an outer peripheral part of said piezoelectric ceramic vibrator and has an opening part in a front face of said dome-shaped diaphragm. But Maeda does not clearly teach that a diameter of a dome part of said dome-shaped diaphragm is made to be 0.5 to 0.8 times of an effective movable diameter of said piezoelectric ceramic vibrator as claimed. Since Maeda does not specially restrict the dimension of the dome part of said dome-shaped diaphragm and altering the size of and providing desirable material, especially commercially available material, for the dome of the speaker is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a suitable diameter of the dome part of said dome-shaped diaphragm, such as 0.6 to 0.7 times of an effective movable diameter of said piezoelectric ceramic vibrator, for the speaker, in order to provide a speaker device having desirable acoustic characteristics for certain applications. Furthermore, Maeda does not clearly teach that the diameter of said piezoelectric ceramic is almost identical to that of said dome part as claimed. Since Maeda does not specially restrict the size of the dome part of said dome-shaped diaphragm and the piezoelectric ceramic, and providing a desirable sized dome part and piezoelectric ceramic for the speaker is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a suitable diameter of the dome part and piezoelectric ceramic, such as both having similar diameter, for the speaker, in order to provide a speaker device having desirable acoustic characteristics for certain applications.

Regarding claim 5, Maeda discloses a speaker for reproducing ultrahigh frequency output, comprising: a schematically disk-shaped piezoelectric ceramic vibrator (21-23) in which

a piezoelectric ceramic (22 or 23) and a metal substrate (21) are bonded; a dome-shaped diaphragm (42) attached to said piezoelectric ceramic vibrator; and a panel (10) which fixes an outer peripheral part of said piezoelectric ceramic vibrator and has an opening part in a front face of said dome-shaped diaphragm. But Maeda does not clearly teach that a diameter of a dome part of said dome-shaped diaphragm is made to be 0.5 to 0.8 times of an effective movable diameter of said piezoelectric ceramic vibrator as claimed. Since Maeda does not specially restrict the dimension of the dome part of said dome-shaped diaphragm and altering the size of and providing desirable material, especially commercially available material, for the dome of the speaker is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a suitable diameter of the dome part of said dome-shaped diaphragm, such as 0.6 to 0.7 times of an effective movable diameter of said piezoelectric ceramic vibrator and having higher resonance frequency, for the speaker, in order to provide a speaker device having desirable acoustic characteristics for certain applications.

### ***Conclusion***

10. The prior art of Foreign Patent Documents have not made of record, since there is no copy of each listed foreign patent documents with **English Translation** provided by the applicant (please see on PAIR). Please provide a copy of each listed foreign patent documents in next communication for consideration.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(571)-272-7505**, and the number for fax machine is **(571)-273-7505**. The examiner can normally be reached on Tuesday

Art Unit: 2643

and Thursday from 10:00 am to 8:00 pm, and may be reached on Monday, Wednesday and Friday from 10:00 am to 8:00 pm. If it is necessary, the examiner's supervisor, **Sinh N. Tran**, can be reached at **(571)-272-7564**.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (**PAIR**) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

13. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is **(571)-272-2600**, or please see <http://www.uspto.gov/web/info/2600>.

September 10, 2005



**SUHAN NI**  
PRIMARY EXAMINER